material from the column and composting the spent cellulose-based material to reduce its volume and degrade and concentrate the removed contaminants. The specification describes the advantages of this previously unknown or used method of adsorbing contaminants from a fluid which is passed through a column. The method provides unheard of economies and efficiencies for the treatment of contaminated fluids and the disposal of spent adsorbent material.

The disclosure of Willett et al. is directed to a process for the preparation of kenaf stalks which are then used as an oil absorbent in the process of cleaning up oil spills. Willett et al. disclose the use of kenaf in an absorption process. Unlike Willet et al. Applicants process of adsorption is an electrostatic mechanism that utilizes surface attraction to remove chemicals out of solution from fluids. The absorption process of Willett et al. and the adsorption process of the present invention are separate and distinct processes. The present invention, as discussed in the specification, teaches adsorption of soluble contaminants from a fluid (i.e., from a single phase system). In contrast, Willett et al. discloses an absorption process for separating oil from a contaminated oil/water mixture (i.e., from a two phase system). Further, it is not inherently obvious that the kenaf as described for use by Willett et al. would be effective toward the adsorption of soluble pollutants. On the clear distinction that Willett et al. discloses only an absorption process and the present invention specifically claims an adsorption process, the claims are not anticipated or rendered obvious over Willett et al.

Further, Willett et al. is completely silent with regard to another essential elements of the Applicants present invention. Willett et al. fails to teach that the kenaf material within the column can be removed from the column when the absorbing material is spent. From a reading of the Willett et al. disclosure, it would be possible that the kenaf material is not removed from

the column and replaced but, instead, the kenaf-packed column is a disposable unit that is designed for one-time use followed by an unspecified disposal of the contamination-filled column. Willet et al. does not suggest the use of a reusable column or the removal and disposal of the kenaf material. Much less, Willett et al. does not suggest or teach the composting of spent kenaf material and the advantages of Applicants invention. When the reference is silent on an element of Applicants claimed invention, it is improper to assume that the element exists or would be suggested. Further, removal of spent filtering material from a container designed to hold that material can hardly be considered an inherent quality of all such containers. There are many commercially available water filters and air filters that are configured for one-time use and subsequent disposal. This fact teaches away from any assumption that Willett et al. inherently would include the step of removing the spent kenaf material. Willett et al. is completely silent about removal of the kenaf material from the column, much less the composting step of the present invention.

Willett et al. therefore does not teach an adsorption process using a column packed with a cellulose-based material from which the material can be removed when it is spent and, as the Examiner admits, does not teach the subsequent composting of the spent material.

Wieser-Linhart fails to make up for the deficiencies of Willet et al. The disclosure of Wieser-Linhart is directed to a method and an apparatus for binding emulsified resin and tar substances in circulating water of a wet-cleaning and wet precipitation system for waste gas produced in the wood industry. Like Willett et al., Wieser-Linhart clearly discloses an absorption process that is completely unlike the claimed adsorption process of the present invention. Wieser-Linhart fails to teach or suggest an adsorption process for the removal of heavy metals or for the

concentration of organics via adsorption. Wieser-Linhart is concerned exclusively with free product removal rather than removal of soluble fractions, as in the present invention. Wieser-Linhart meters wood dust as a freely suspended material into the circulating water where the wood dusts serves to absorb the contaminating resin and tar substances from the emulsion. The absorbant wood dust is later removed from the water path. Wieser-Linhart fails to teach or suggest an adsorption process using a column. Wieser-Linhart teaches that the wood dust can be removed from the water and sedimented. Wieser-Linhart also teaches that the residual product, the sedimented wood dust, can be disposed of in the form of drained sediment, either by burning or composting. Burning or composting are two vastly different options that are much more complex than is warranted in one sentence describing both processes. Wieser-Linhart hardly teaches removal of a material from a column and disposal of that material by composting. Applicants carried out extensive research over a prolonged period to arrive at the presently claimed adsorption process and the successful disposal method for spent materials by composting. Finally, the disclosure of Wieser-Linhart is limited to liquid emulsions and, as such, is incapable of performing the Applicants claimed invention, which treats a contaminated fluid, the fluid according to the specification being a liquid or a gas.

The Wieser-Linhart disclosure does not teach or suggest that the wood dust can be employed in any other manner than by allowing the wood dust to be metered into the liquid flow of the apparatus. This oil-contaminated water and wood dust slurry can not be seen as equivalent in any way to the adsorption process carried out in the packed-column of the present invention. The fact that Wieser-Linhart teaches removal of the wood dust from the slurry is also not at all similar to the removal of a cellulose-based material from a column as in the present invention.

Wieser-Linhart utterly fails to suggest the use of a column from which the spent material can be removed for composting.

The references cited by the Examiner, considered alone or in combination, do not include all of the claimed steps of the present invention. Further, the reference does not provide a teaching to combine or a likelihood of success of such a combination as is required to show obviousness of the present invention. Thus, the combination of Willet et al. in view of Wieser-Linhart does not teach or suggest the Applicants invention as claimed. Accordingly, withdrawal of the rejection is respectfully requested.

Claims 1-4, 6-8, 10, 11, 13 and 14 are rejected under 35 U.S.C. §130(a) as being unpatentable over Bowes et al. (U.S. Patent 4,133,929) in view of Wieser-Linhart (U.S. Patent 5,762,662). Applicants respectfully traverse the rejection.

The disclosure of Bowes et al. is directed to the preparation of a cellulosic absorption material which contains at least one chelate-forming amino acid group which is bonded through a specific bonding group such that the carbonyl group of the bonding group is linked to the chelate-forming radical and the oxygen of the bonding group is linked to the cellulose portion. Bowes et al. teach that the ionically-modified cellulose materials are suitable chiefly for removing or "locking up" heavy metal ions and that the efficiency of this modified material is significantly greater than conventional absorption agents (See column 4, lines 40-61). Bowes et al. disclose a totally different process for removing heavy metals from water streams. The references teaches an ion exchange process based on the addition of chelators onto cellulose substrates. This is a dramatic chemical modification of the cellulose material that involves the addition of the chelant onto the surface where, when in contact with a metal cation, an exchange of ions occurs thus

removing the metal from the water stream. The process of Bowes et al. is not adsorption as claimed in the present invention.

Further, the disclosure of Bowes et al. is concerned primarily with the production of an improved ionically treated cellulose filter material. Bowes et al. fail to teach the use of a column for containing the ionically treated cellulose material. Rather, Bowes et al. teach that one of several suitable methods for use with the material of the Bowes et al. invention is a "fixed bed process" and as disclosed in column 4, lines 50-51, the material can be in the form of granules, filter paper, blotting paper or pulp. Bowes et al. do not specifically teach the use of a column and importantly, does not teach the removal of spent filter material from a column for subsequent disposal. In fact, disposal of the material, no matter how used in the Bowes et al. process, is not addressed at all.

Thus, the invention of Bowes et al. is not directed to a method of treating contaminated fluid whereby the fluid is passed through a column packed with cellulose-based material, the contaminant removed by an adsorption process, and the spent material subsequently being removed from the column and then composted. As with the Willett et al. reference discussed above, it is not permissible to assume an inherent teaching of removal of the filter material when there is no such teaching or suggestion in the reference and the prevalence of disposable filter canisters is well known in the art. The claimed "removing" step from a column is not taught or suggested by any of the cited references.

The above discussion of the short-comings of Wieser-Linhart disclosure is equally applicable to the present argument. Wieser-Linhart fail to make up for the deficiencies of Bowes et al. Applicants therefore respectfully assert that the claimed invention is not obvious over

Bowes et al. in view of Wieser-Linhart. Withdrawal of the rejection is respectfully requested.

CONCLUSION

In light of the above, the Applicants believe that this application is now in condition for allowance and therefore requests favorable consideration.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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